

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

## Zinc sulfate heptahydrate for analysis

Revision date: 25.09.2023

Product code: 15316

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Zinc sulfate heptahydrate for analysis

REACH Registration Number: 01-2119474684-27-XXXX  
CAS No: 7446-20-0  
Index No: 030-006-00-9  
EC No: 231-793-3

**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Laboratory chemical

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

**Uses advised against**

Do not use for private purposes (household).

**1.3. Details of the supplier of the safety data sheet**

Company name: AnalytiChem GmbH  
Street: Stempelstraße 6  
Place: D-47167 Duisburg  
Telephone: 0203/5194-0  
E-mail: info@analytichem.de  
Contact person: Abteilung Produktsicherheit  
E-mail: produktsicherheit@analytichem.de  
Internet: www.analytichem.de  
Responsible Department: Abteilung Produktsicherheit

Telefax: 0203/5194-290  
Telephone: 0203/5194-107/117

**1.4. Emergency telephone number:**

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

**Further Information**

No data available

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No 1272/2008**

Acute Tox. 4; H302  
Eye Dam. 1; H318  
Aquatic Acute 1; H400  
Aquatic Chronic 1; H410

Full text of hazard statements: see SECTION 16.

**2.2. Label elements****Regulation (EC) No 1272/2008****Signal word:** Danger**Pictograms:**

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**Hazard statements**

H302 Harmful if swallowed.  
H318 Causes serious eye damage.  
H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P313 Get medical advice/attention.

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients**

**3.1. Substances**

Sum formula: ZnSO<sub>4</sub> \* 7 H<sub>2</sub>O  
Molecular weight: 287,54 g/mol

**Hazardous components**

CAS No	Chemical name	Quantity
	EC No Index No REACH No	
	Classification (Regulation (EC) No 1272/2008)	
7446-19-7	zinc sulphate (hydrous) (mono-, hexa-and hepta hydrate)	100 %
	231-793-3 030-006-00-9	
	Acute Tox. 4, Eye Dam. 1, Aquatic Acute 1, Aquatic Chronic 1; H302 H318 H400 H410	

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
7446-19-7	231-793-3	zinc sulphate (hydrous) (mono-, hexa-and hepta hydrate)	100 %
		dermal: LD50 = > 2000 mg/kg; oral: LD50 = ca. 926 mg/kg	

**Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

No data available

**After inhalation**

Provide fresh air.

**After contact with skin**

Wash immediately with: Water  
Take off immediately all contaminated clothing and wash it before reuse.

**After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

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Remove contact lenses, if present and easy to do. Continue rinsing.

#### After ingestion

Rinse mouth immediately and drink plenty of water.

Call a physician immediately.

#### 4.2. Most important symptoms and effects, both acute and delayed

Irritant

corrosive

Abdominal pain

Gastrointestinal complaints

Vomiting

Cardiac arrhythmias

Circulatory collapse

Risk of serious damage to eyes.

#### 4.3. Indication of any immediate medical attention and special treatment needed

No data available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

##### Unsuitable extinguishing media

no restriction

#### 5.2. Special hazards arising from the substance or mixture

Non-combustible solids

Hazardous combustion products

In case of fire may be liberated:

Sulphur oxides

#### 5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Avoid contact with skin, eyes and clothes.

#### Additional information

Suppress gases/vapours/mists with water spray jet.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

##### For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

#### 6.3. Methods and material for containment and cleaning up

##### For containment

Cover drains.

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Prevent spread over a wide area (e.g. by containment or oil barriers).  
Collect in closed and suitable containers for disposal.  
Take up carefully when dry. Take up dust-free and set down dust-free.

#### For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

#### Other information

Provide adequate ventilation.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

#### **6.4. Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

### SECTION 7: Handling and storage

#### **7.1. Precautions for safe handling**

##### Advice on safe handling

Avoid dust formation.  
Do not breathe dust.  
Read label before use.

##### Advice on protection against fire and explosion

No special fire protection measures are necessary.

##### Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.  
Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

##### Further information on handling

Draw up and observe skin protection programme.  
Wash hands and face before breaks and after work and take a shower if necessary.  
Take off immediately all contaminated clothing and wash it before reuse.

#### **7.2. Conditions for safe storage, including any incompatibilities**

##### Requirements for storage rooms and vessels

Store in a dry place.  
Unsuitable container/equipment material: Metal

##### Further information on storage conditions

Keep container tightly closed.  
storage temperature +5°C - +30 °C

#### **7.3. Specific end use(s)**

Laboratory chemicals

### SECTION 8: Exposure controls/personal protection

#### **8.1. Control parameters**

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#### DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
7446-19-7	zinc sulphate (hydrous) (mono-, hexa-and hepta hydrate)		
Worker DNEL, long-term	inhalation	systemic	1 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	8,3 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	1,25 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	8,3 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	0,83 mg/kg bw/day

#### PNEC values

CAS No	Substance	
Environmental compartment	Value	
7446-19-7	zinc sulphate (hydrous) (mono-, hexa-and hepta hydrate)	
Freshwater	0,0206 mg/l	
Marine water	0,0061 mg/l	
Freshwater sediment	117,8 mg/kg	
Marine sediment	56,5 mg/kg	
Micro-organisms in sewage treatment plants (STP)	0,1 mg/l	
Soil	35,6 mg/kg	

#### 8.2. Exposure controls

##### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

Provide adequate ventilation as well as local exhaust at critical locations.

##### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Suitable eye protection: goggles.

##### Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact:

Trade name/designation: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact:

Trade name/designation: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

Wearing time with occasional contact (splashes): > 480 min

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The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet (>,<) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

**Skin protection**

Wear suitable protective clothing.

**Respiratory protection**

Respiratory protection necessary at: dust formation  
Filtering device with filter or ventilator filtering device of type: P2

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

Physical state:	solid
Colour:	white
Odour:	odourless
Odour threshold:	not determined
Melting point/freezing point:	100 °C
Boiling point or initial boiling point and boiling range:	not determined
Flammability:	not determined
Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Flash point:	not applicable
Decomposition temperature:	> 39 - 280 °C
pH-Value (at 20 °C):	~4-6 (50 g/l)
Viscosity / kinematic:	not determined
Water solubility:	965 g/L
Solubility in other solvents	not determined
Dissolution rate:	not determined
Partition coefficient n-octanol/water:	No data available
Dispersion stability:	not determined
Vapour pressure:	No data available
Vapour pressure:	not determined
Density:	1,97 g/cm <sup>3</sup>
Relative density:	not determined
Bulk density:	800--1000 kg/m <sup>3</sup>
Relative vapour density:	not determined
Particle characteristics:	not determined

**9.2. Other information**

**Information with regard to physical hazard classes**

Explosive properties	No data available
Sustaining combustion:	No data available
Self-ignition temperature	
Solid:	not determined
Gas:	not applicable

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Oxidizing properties

No data available

#### Other safety characteristics

Evaporation rate: not determined

Solvent separation test: not determined

Solvent content: not determined

Solid content: 100%

Sublimation point: not determined

Softening point: not determined

Pour point: not determined

not determined:

Viscosity / dynamic: not determined

Flow time: not determined

#### Further Information

not determined

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No data available

### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

### 10.3. Possibility of hazardous reactions

Violent reaction with:  
Oxidising agent, strong

### 10.4. Conditions to avoid

No data available

### 10.5. Incompatible materials

Metal

### 10.6. Hazardous decomposition products

In case of fire may be liberated:  
SECTION 5: Firefighting measures

#### Further information

No data available

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Toxicokinetics, metabolism and distribution

No data available

#### Acute toxicity

Harmful if swallowed.

Pulmonary oedema

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7446-19-7	zinc sulphate (hydrous) (mono-, hexa-and hepta hydrate)				
	oral	LD50 mg/kg	ca. 926	Mouse	Vet Hum Toxicol 30(3):224-228 (1988)
	dermal	LD50 mg/kg	> 2000	Rat	Study report (1999)

**Irritation and corrosivity**

Causes serious eye damage.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

slightly irritant but not relevant for classification.

**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Information on likely routes of exposure**

not determined

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available

**Practical experience**

No data available

**11.2. Information on other hazards**

**Endocrine disrupting properties**

not determined

**Other information**

No data available

**Further information**

Irritant

corrosive

Abdominal pain

Gastrointestinal complaints

Vomiting

Cardiac arrhythmias

Circulatory collapse

Risk of serious damage to eyes.

**SECTION 12: Ecological information**

**12.1. Toxicity**



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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
7446-19-7	zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate)					
	Acute fish toxicity	LC50 mg/l	0,315	96 h	Thymallus arcticus	Ecotoxicology and environmental safety 2 other: American Society for testing matr
	Acute crustacea toxicity	EC50 mg/l	1,22	48 h	Daphnia magna	Publication (1995) other: US EPA/600/4-85/013: methods for
	Fish toxicity	NOEC mg/l	0,44	72 d	Oncorhynchus mykiss	Trans. Am. Fish. Soc. 111, 70-77 (1982) lab -designed dose response test with sm
	Algae toxicity	NOEC mg/l	0,313	5 d	Ulva pertusa, Green macroalga, Ulvaceae	Aquatic Toxicology 75:202-212 (2005) 5-d sporulation-inhibition test with mar
	Crustacea toxicity	NOEC mg/l	0,05	4 d	Ceriodaphnia dubia	Environ. Toxicol. Chem. 10, 47-55 (1991) other: USEPA chronic survival and reprod
	Acute bacteria toxicity	(EC50	5,2 mg/l)	3 h	activated sludge of a predominantly domestic sewage	Water research volume 17, nr10, 1363-136 OECD Guideline 209

**12.2. Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

**12.3. Bioaccumulative potential**

No data available

**BCF**

CAS No	Chemical name	BCF	Species	Source
7446-19-7	zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate)	96,05	Danio rerio	Chemosphere 128:125-

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**12.7. Other adverse effects**

Discharge into the environment must be avoided.

**Further information**

Do not allow to enter into surface water or drains.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Do not mix with other wastes.

Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains.

**Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific

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to the industry and process.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

<b>14.1. UN number or ID number:</b>	UN 3077
<b>14.2. UN proper shipping name:</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc sulphate (hydrous) (mono-, hexa-and hepta hydrate))
<b>14.3. Transport hazard class(es):</b>	9
<b>14.4. Packing group:</b>	III
Hazard label:	9
Classification code:	M7
Special Provisions:	274 335 375 601
Limited quantity:	5 kg
Excepted quantity:	E1
Transport category:	3
Hazard No:	90
Tunnel restriction code:	-

**Inland waterways transport (ADN)**

<b>14.1. UN number or ID number:</b>	UN 3077
<b>14.2. UN proper shipping name:</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc sulphate (hydrous) (mono-, hexa-and hepta hydrate))
<b>14.3. Transport hazard class(es):</b>	9
<b>14.4. Packing group:</b>	III
Hazard label:	9
Classification code:	M7
Special Provisions:	274 335 375 601
Limited quantity:	5 kg
Excepted quantity:	E1

**Marine transport (IMDG)**

<b>14.1. UN number or ID number:</b>	UN 3077
<b>14.2. UN proper shipping name:</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate heptahydrate)
<b>14.3. Transport hazard class(es):</b>	9
<b>14.4. Packing group:</b>	III
Hazard label:	9
Special Provisions:	274, 335, 966, 967, 969
Limited quantity:	5 kg
Excepted quantity:	E1
EmS:	F-A, S-F

**Air transport (ICAO-TI/IATA-DGR)**

<b>14.1. UN number or ID number:</b>	UN 3077
<b>14.2. UN proper shipping name:</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate heptahydrate)
<b>14.3. Transport hazard class(es):</b>	9
<b>14.4. Packing group:</b>	III
Hazard label:	9
Special Provisions:	A97 A158 A179 A197
Limited quantity Passenger:	30 kg G
Passenger LQ:	Y956
Excepted quantity:	E1
IATA-packing instructions - Passenger:	956
IATA-max. quantity - Passenger:	400 kg
IATA-packing instructions - Cargo:	956

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IATA-max. quantity - Cargo:

400 kg

#### **14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: Yes

Danger releasing substance: Zinc sulphate heptahydrate

#### **14.7. Maritime transport in bulk according to IMO instruments**

not applicable

### SECTION 15: Regulatory information

#### **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

##### **EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 75

Information according to 2012/18/EU (SEVESO III): E1 Hazardous to the Aquatic Environment

##### **National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 3 - highly hazardous to water

### SECTION 16: Other information

#### **Changes**

This data sheet contains changes from the previous version in section(s): 9,12.

#### **Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Acute Tox: Acute toxicity

Eye Dam: Eye damage

Aquatic Acute: Acute aquatic hazard

Aquatic Chronic: Chronic aquatic hazard

#### **Relevant H and EUH statements (number and full text)**

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

#### **Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.